REMARKS/ARGUMENTS

Claims 1-4, 8-18, 20, 32-39, 46-49 and 51-67 are pending. Claims 1, 8, 11-15 and 52 are amended. Claims 11 and 12 are withdrawn. Claims 53-67 are submitted. Claims 40-41 are canceled.

In response to the Office Action, favorable reconsideration and allowance of the present application are respectfully requested. The Office action rejected claim 52 under 35 USC §112, first paragraph, alleging claim 52 introduced new matter. As discussed during the interview conducted August 13, 2008, it is submitted that, by replacement of oxygen-off gas with "oxidative-off gas in claim 52, this issue is rendered moot.

The Office Action also rejected claim 1 as anticipated by GB 2242563. In addition, claims 1, 8, 11-15 and 52 were rejected as obvious in view of Joerissen et al. and Boneberg. For the reasons set forth in detail below, it is respectfully submitted that this application is now in condition for allowance.

Applicants thank the Examiner for the courtesies extended to Applicants' representative during a personal interview conducted August 13, 2008. As noted above, during the interview, the Examiner indicated that the change to claim 52 would appear to overcome the rejection under 35 USC §112. In addition, as discussed during the interview, the GB reference only provides check valves, and therefore, fails to disclose or suggest the features of the present invention.

During the interview, Applicants' representative also pointed out that the cited references were not properly combinable, and even if combined, the present invention would not result. No agreement was reached in this regard. However, as discussed in further detail below, it is submitted that the cited references fail to disclose or render obvious the combined

features of the present invention as set forth in the amended claims and new claims, and therefore, this application is now in condition for allowance.

In accordance with amended claim 1, a controller is provided to control operation of the valve in order to allow or block the flow of hydrogen-off gas to the mixing portion, and thus control flow of the hydrogen-off gas which is mixed with the oxygen-off gas in the mixing portion. Thus, with the arrangement of claim 1, the amount of mixing of the hydrogen and oxygen-off gases is controlled, because the valve which allows or blocks hydrogen-off gas to the mixing portion is controlled.

The cited references fail to disclose or suggest the arrangement of claim 1, or numerous features of the claims depending therefrom.

As described at pages 9 and 10 of the translation of Joerissen, the valve 7 of Joerissen is opened only (a) when a rinsing cycle for the anode is activated, or (b) when the mean cell voltage falls below a threshold. In addition, Joerissen separately discharges the hydrogen and oxygen-off gases. Thus, Joerissen does not disclose or suggest the provision of a controller for controlling a valve to be opened in order to control the flow of hydrogen-off gas for mixing with oxygen-off gas in the mixing portion. Moreover, since Joerissen provides separate discharges of hydrogen-off gases and oxygen-off gases, there is no suggestion nor any concern with controlling relative amounts of hydrogen-off gas and oxygen-off gas to a mixing portion.

Further, Boneberg also fails to disclose or suggest controlling of a hydrogen-off gas flow to be sent to a mixing portion, and therefore, it is submitted that even the combined teachings of Joerissen and Boneberg fail to disclose or suggest controlling of a hydrogen-off gas flow by opening and closing a valve to a mixing portion at which the hydrogen-off gas is mixed with the oxygen-off gas, and thereby controlling the amount or concentration of the

hydrogen-off gas in the mixture. In fact, even considering the teachings together, there is no concern or need for such a control -- because Boneberg desires to send the gases to a thermal burner (as discussed further below), and uses methanol to ensure good thermal burning.

It is also respectfully submitted that the combination of Joerissen and Boneberg is improper, since the references are directed toward different purposes and objectives with respect to each other. Specifically, Joerissen intends to discharge the hydrogen-off gas and the oxygen-off gas separately, without mixing. Further, Joerissen desires to minimize discharge of hydrogen so that nearly 100% of the hydrogen is utilized:

> In this way, the present invention ***assures that the hydrogen coming from storage facility 19 is nearly 100% utilized***, since only in the case of enrichment of the anode circuit with inert gas and a resulting drop in cell voltage below the cut-off threshold will unreacted hydrogen be discharged through valve 7 and condensate water separator 8a.

Page 10 of the translation of Joerissen, emphasis added. By contrast, Boneberg provides an arrangement in which it is desired to thermally burn the hydrogen-off gas and oxygen-off gas. In Boneberg, in view of the clear teaching of adding methanol (see for example figure 1), and the expressed preference for use of a thermal burner (Boneberg at col. 3, lines 66-67), there is no need or concern for controlling or limiting flow of hydrogen-off gas to a mixing portion. In fact, if anything, Boneberg teaches contrary to the present invention and Joerissen, because Boneberg desires a gas feed that is suitable for ignition in a thermal burner. Accordingly, it is submitted that the references are combined based only on Applicants' own disclosure, rather than based upon the teachings of the references themselves. Moreover, as noted above, even if combined, there is no suggestion as to controlling a flow of hydrogen to a mixing portion at which both hydrogen-off gas and oxygen-off gas are mixed -- neither of the references suggests this feature nor are they concerned with such a feature -- as the references are directed toward different purposes and objectives with respect to each other, and the cited

references are also directed toward different purposes and objectives as compared with the present invention. With the present invention, mixing is provided to achieve a hydrogen discharge which is less prone to ignition.

The cited references also fail to disclose or suggest numerous features set forth in the remaining independent and dependent claims of the present application, and moreover, it is submitted that since the cited references are directed toward the different purposes and objectives, the cited references would not render obvious the features of the present claims.

For example, claims 8 and 51 include the feature in which hydrogen-off gas can be returned to the fuel cell inlet, which is also inconsistent with the teachings of Boneberg, because Boneberg desires to provide hydrogen for thermal burning and to provide heat for a heat exchanger. With regard to claims 52 and 53, although the Office Action (at page 10) asserts that Boneberg teaches mixing of only exhaust gases from the anode and cathode streams, citing col. 3, lines 32-45, -- the teachings of Boneberg are to the contrary because figure 1 of Boneberg illustrates, and col. 3, line 40 confirms, that methanol is also fed to the mixing portion and this is because Boneberg desires to burn the gases in a burner 3. Accordingly, it is submitted that the features of independent claims 52 and 53 are also not disclosed or suggested by the cited references.

The features of new dependent claims 54-67 relate to additional aspects of the present invention which provide a more advantageous discharge of a hydrogen-off gas. By way of example, and not to be construed as limiting, such features are supported by pages 16 and 19-25 of the present specification. (Note also that the first full paragraph of page 30 of the present specification indicates that the figure 6 embodiment of the present application also utilizes the features described at pages 19-25 to provide resulting hydrogen concentrations that avoid or reduce the possibility of ignition). In addition, it is submitted that the cited

references teach away from the features of the present claims, because Boneberg desires to provide a gas mixture which can be burned by a thermal burner 3, whereas the present invention desires to provide an output which reduces the possibility of ignition.

Claim 54 includes the feature in which the control portion controls the valve to open or close according to an elapsed timing, while claim 55 recites that the control portion controls opening based on a timer, and new claim 66 recites control by a timer or a hydrogen concentration sensor. By way of example, see the last two sentences of page 16 of the present specification regarding timing control, or control by a sensor. Also by way of example, see page 20 of the present specification. These features are not suggested by any of the cited references, particularly in combination with the features of claim 1.

Claim 56 includes the feature in which the control portion controls the opening of the valve such that the valve is not opened for longer than the predetermined time, with claim 57 further reciting that the predetermined time is equal to or less than one second. By way of example, and not to be construed as limiting, such features are supported by pages 19-20 of the present specification. Further, as set forth in the first full paragraph of page 21, with this arrangement, the gases can be discharged reliably while avoiding ignition. Moreover, the first full paragraph of page 19 of the present specification describes one of the objectives of the invention -- which is not suggested by (and in fact is contrary to) the cited references.

Claim 58 recites that the control portion controls opening and closing of the valve to feed the hydrogen-off gas to the mixing portion such that the concentration of hydrogen after passing through the mixing portion is reduced to reduce the possibility of ignition. This feature is also supported by page 19-25 of the present specification, which describe that the control of hydrogen-off gas to the mixing portion is controlled with various expedients, such that the possibility of ignition is reduced. By contrast, Boneberg provides an arrangement

which burning of the gas is desirable utilizing a thermal burner 3 (col. 3, line 67). See also new dependent claims 64, 65, and 67.

One of the ways in which this (i.e., reducing the possibility of ignition) is provided is, as noted above in the context of claim 56, and as also set forth in claim 59, by controlling the opening of the valve such that it is not opened for greater than a predetermined amount of time. Once again, such an arrangement is contrary to the teachings of Boneberg. Further, claim 60 provides that the controller increases a flow of oxygen-off gas for situations in which the valve is open. By way of example, as shown in figures 2 and 3 of the present specification, this can be provided by first increasing the drive of the oxygen-off gas compressor before opening of the valve (figure 2), or by opening of the valve in response to a determination that the output of the compressor is higher than a predetermined output (fig 3, see also claim 61).

Claim 62 includes the feature in which the control portion repeatedly opens and closes the valve until a predetermined time has elapsed. By way of example, such a feature is shown in figure 4 of the present application, and is not suggested by the cited references.

Finally, it is respectfully submitted that, to the extent the Office Action might be asserting that functional language of the present claims is met where the references simply could be modified to perform such functions, such assertions have been squarely rejected by the Federal Circuit. For example, in *In re Mills*, 16 USPQ2d 1430, 1432-33 (Fed.Cir. 1990), in reversing a rejection upheld by the PTO Board, the Federal Circuit recognized (emphasis added):

> The Board concluded on this point: "[w]e are of the opinion that the Mathis machine is ***capable of being operated*** in such a fashion as to cause [the output] pump 18 to draw air into the mixing chamber 17 so that it is entrained in the mixture."

> The Board also agreed with Mills' contention that Mathis is not directed to the problem of producing aerated cementitious material, but noted that Mills is not claiming a method, but an apparatus, and all of Mills' apparatus structure is present in the Mathis machine.
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> While Mathis' apparatus may be ***capable of being modified*** to run the way Mills' apparatus is claimed, there must be a suggestion or motivation in the refrence to do so. *See In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed.Cir. 1984) ("The mere fact that the prior art could be so *modified* would not have made the modification obvious unless the prior art suggested the desirability of the modification.")

See also *In re Robertson*, 49 USPQ2d 1949 (Fed. Cir. 1999) (that a feature in the prior art "could" operate as claimed is not sufficient); *K-2 Corp. v. Salomon* 52 USPQ2d 1001, 1004 (Fed.Cir. 1999) ("The functional language is, of course, an additional limitation in the claim.").

In view of the foregoing, it is respectfully submitted that the cited references fail to disclose or render obvious the combined features of the present invention. Moreover, it is submitted that one skilled in the art would not be prompted to modify the cited references to arrive at the arrangement of the present claims, because the cited references are directed toward different purposes and objectives as compared with each other and as compared with the present invention.

A Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, he is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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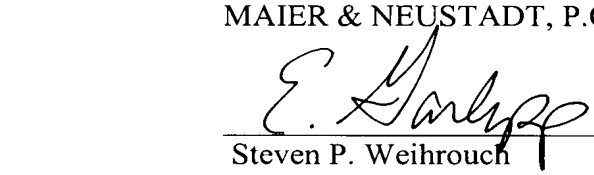

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